

REMARKS

Applicants acknowledge receipt of an Office Action dated December 9, 2009. In this response, Applicants have amended the title of the application to correct a typographical error. In addition, Applicants have amended claim 15 and have added claims 16-21. Following entry of these amendments, claims 1-21 are pending in the application.

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Rejection Under 35 U.S.C. §112, 1st Paragraph

On page 2 of the Office Action, the PTO has rejected claims 15 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. Applicants respectfully traverse this rejection.

Claim 15 has been amended to recite the method of measuring haze, as taught in ¶0057, and the haze range endpoints of 5% and 25%, as supported by Example 5 (¶0066) and Example 7 (¶0067), respectively. No new matter has been added with this amendment.

In view of this amendment, Applicants submit that the rejection under 35 U.S.C. §112, first paragraph, has been overcome and request that the PTO withdraw that rejection.

Rejection Under 35 U.S.C. §112, 2nd Paragraph

On page 2 of the Office Action, the PTO has rejected claims 1-14 under 35 U.S.C. §112, second paragraph, as allegedly indefinite. Applicants respectfully traverse this rejection.

The PTO has suggested that the term “vinylisoprene” is unclear, because isoprene has several possible points of attachment. Moreover, on page 4 of the Office Action the PTO has noted that no vinyl unit attached to an isoprene unit appears in Applicants’ declaration filed under 37 C.F.R. 1.132.

Applicants wish to direct the PTO’s attention to ¶¶0007 and 0008 of the present application, where the styrene and isoprene elastomer resins are described, Applicants point out that the specification recites resins “commercialised by KURARAY under the trade name HYBRAR.” Such resins, the specification continues, include up to about 40% by weight of

styrene in blocks linked by “blocks made of vinyl-isoprene-co-polyisoprene.” Applicants had attempted to copy the characterization of the resin from product specifications promulgated by KURARAY, as can be found on the company website, www.septon.info/en/hybrar/what_hybrar.html.

The depiction on the KURARAY website shows that 1,4-linked polyisoprene is called simply polyisoprene, whereas 3,4-linked polyisoprene is called “vinyl-polyisoprene.” Although the depicted “vinyl-polyisoprene” is devoid of extra vinyl groups, beyond the free vinyl groups that resulted from the 3,4 linkages, this usage is nevertheless in current commercial use, and, following their supplier’s terminology, Applicants denoted the monomer unit of this poly 3,4-isoprene as “vinyl isoprene.”

In addition to the foregoing and in order to further aid the PTO, Applicants are submitting herewith copies of U.S. Patent 4,894,425 and 4,987,194 as well as a copy of the definition of polyisoprene from Römpp Chemie Lexikon.

The relevant inquiry is how the term is used and understood by those working in the relevant art. Applicants submit that, for the reasons noted above, the term “vinyl-polyisoprene” is clearly understood by those working in this field.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under 35 U.S.C. §112, second paragraph.

Rejections Under 35 U.S.C. §102(b)

On page 3 of the Office Action, the PTO has rejected claims 1-3 and 10-14 under 35 U.S.C. §102(b) as allegedly unpatentable over U.S. Patent Application Publication 2003/0049477 to Morizono *et al.* (hereafter “Morizono”). Applicants respectfully traverse this rejection.

The PTO has suggested that Morizono teaches a composition requiring spp which may contain a styrene butadiene/isoprene block copolymer. However, Morizono does not teach the high vinyl content isoprene of the presently claimed invention. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §102(b) does not properly apply to the currently pending claims and, for this reason, request that the §102 be withdrawn.

In addition, Applicants wish to direct the PTO to their previously filed response which they incorporate herein by reference. In that response, *inter alia*, Applicants disputed the

PTO's assertion that Morizono anticipates the claimed invention, noting that nothing in Morizono teaches the one particular combination out of the vast number – many thousands – of possible combinations of components in Morizono that fail to read on Applicants' claims.

In the present Office Action the PTO has explained its position by likening it to the concept that despite many thousands of compounds contained in the Merck Index, the Merck Index anticipates each and every one of them. While Applicants do not dispute that every individual compound disclosed in the Merck Index could be available to anticipate a claim to an individual compound, Applicants note that the disclosure of an individual compound is separate and distinct from a disclosure of the use of multiple compounds in combination. A failure to explicitly disclose the combination is a failure to anticipate.

Applicants suggest that the PTO's argument regarding anticipation could be more appropriately characterized as one suggesting that an English Dictionary anticipates a Shakespearean Sonnet because all of the words present in the Shakespearean Sonnet are individually disclosed in the English Dictionary. For the same reasons that Applicants expressly disagree with the notion that the English Dictionary anticipates a Shakespearean Sonnet, Applicants expressly disagree with the PTO's suggestion that Morizono anticipates the present claims.

Finally, Applicants wish to direct the PTO's attention to the following cases which address the issue of anticipation and which state that in order to satisfy the requirements for anticipation "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. . . *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Here, Morizono clearly does not meet the standard for anticipation.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under §102.

Rejections Under 35 U.S.C. §103

On page 2 of the Office Action, the PTO has rejected claims 1-15 under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent Application Publication 2004/0127614 to Jiang *et al.* (hereafter "Jiang").

Additionally, on page 3 of the Office Action, the PTO has rejected claims 1-3, 5, 10, 11, and 14 under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent Application Publication 2004/0151933 to Ajbani *et al.* (hereafter “Ajbani”).

Applicants respectfully traverse each of these rejections.

Focusing first on Jiang, Applicants note that the field of Jiang’s invention adhesives cannot provide a proper basis for rejecting the currently pending claims. For example, claims 1-15 include individual claims directed to multi-layer films, bags, tubes, and injection moulded articles. Applicants submit that a person skilled in the art would view adhesives technology as at least divergent from multi-layer films, bags, tubes, and injection moulded articles. Although the PTO suggests that Applicants do not affirmatively state that the claimed articles are not adhesive, Applicants submit that it is not necessary for them to do so. The claims must be read in light of the specification, of which they are a part. To read adhesive properties into the claimed compositions and the compositions as used in the claimed articles clearly contradicts and disregards the present specification.

Jiang focuses on polymerization catalyst and techniques to provide polypropylenes suitable as adhesives. The presently claimed invention provides a composition useful for replacing PVC in, for example, films and tubes for medical use. These are totally different fields. A person skilled in the art looking for a PVC replacement material would never even consider Jiang. (Nor would someone looking for an adhesive consider the present document).

Jiang does not explicitly describe a composition like the claimed one. To arrive at such a composition, one has to pick and choose specific substances out of possible ingredients from two separate lists. In these lists there are many possible components and all of them are taught to be equal.

Thus, from among the two “lists” of components one would have to choose specific polymers and combine them, which is even more improbable than choosing substituents from lists and combining them. Jiang does not even show that such polymers should be present at all much less in a formula in which a substituent has to be present.

The PTO is simply picking and choosing text fragments out of Jiang and is simply using the present specification as the guide to combine these fragments. This can be seen by the conclusory and unsupported statement that the presently claimed invention is simply obvious in view of Jiang. The failure to establish a proper motivation for modifying Jiang

“absent any showing of surprising or unexpected results” amounts to improper burden shifting on the part of the PTO.

Without providing any explanation, the PTO acknowledges, with respect to Jiang, that “[t]here are no examples in which all of applicants features are present in combination simultaneously” and then states that “to arrive at such would have been obvious to a practitioner having ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.” This statement does not explain (i) what is missing from the closest disclosure within the reference, (ii) how the closest disclosure would be modified to arrive at the claimed invention, or (iii) why the modification would be made. For this reason, Applicants submit that this rejection is improper and should be withdrawn.

Turning to Ajbani, Applicants note that Ajbani is directed to compositions suitable for handles which are comfortable to use -- “soft and soothing to the touch.” (Ajbani, ¶0012) Ajbani does not mention films or tubes of any kind. Without providing any explanation, the PTO acknowledges, with respect to Ajbani that “[t]here are no examples in which all of applicants features are present in combination simultaneously” and then states that “to arrive at such would have been obvious to a practitioner having ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.” This statement does not explain (i) what is missing from the closest disclosure within the reference, (ii) how the closest disclosure would be modified to arrive at the claimed invention, or (iii) why the modification would be made. For this reason, Applicants submit that this rejection is improper and should be withdrawn.

Finally, and with regard to both the rejection based upon Jiang and the rejection based upon Ajbani, Applicants note that the Federal Circuit has stated that:

The use of *per se* rules, while undoubtedly less laborious than a searching comparison of the claimed invention--including all its limitations--with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. *Per se* rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on *per se* rules of obviousness is legally incorrect and

must cease. Any such administrative convenience is simply inconsistent with section 103, which, according to *Graham* and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations.

In re Ochiai, 37 U.S.P.Q.2d 1127, 1133 (Fed. Cir. 1999). Here with respect to both the rejection based upon Jiang and the rejection based upon Ajbani, the PTO has not performed a searching comparison of the claimed invention--including all its limitations--with the teachings of the prior art as required under §103. The PTO has not provided reason why the person having ordinary skill in the art would have arrived at the instantly claimed invention viewing the references cited by the PTO. In fact, other than the improper use of hindsight, the PTO has no basis for concluding that the claims would have been obvious over either Jiang or Ajbani.

Finally, Applicants note that they do not acquiesce or agree with any statements made by the PTO in the Office Action and not addressed here. Those statements and arguments are not addressed here for the sake of brevity and because Applicants believe that the foregoing arguments alone provide a sufficient basis for withdrawing the outstanding rejections.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under §103.

Newly Added Claims

In this response, Applicants have added new claims 16-21. Claims 16-20 are directed to medical products and are believed to be free of the art cited in the outstanding rejections for at least the same reasons as claim 1 (from which each of claims 16-20 ultimately depends) and because each of these claims is directed to medical products.

Claim 21 is believed to be free of the cited art for at least the same reasons as claim 1 and because the cited references fail to disclose, teach, or suggest a “polymer composition comprising a syndiotactic polypropylene and a thermoplastic elastomer selected from the group consisting of styrene-vinylisoprene-styrene resins and styrene-isoprene-butadiene-styrene resins.”

CONCLUSION

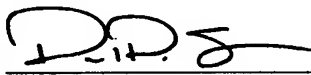
Applicants believe that the present application is now in condition for allowance.
Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 6/8/09

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United States Patent [19]
Hellermann et al.

[11] **Patent Number:** **4,894,425**
 [45] **Date of Patent:** **Jan. 16, 1990**

[54] **PREPARATION OF POLYISOPRENE
 HAVING HIGH CONTENT OF 1,2- AND
 3,4-STRUCTURAL UNITS BY ANIONIC
 POLYMERIZATION**

[75] **Inventors:** **Walter Hellermann, Dorsten;
 Karl-Heinz Nordsiek, Marl; Jürgen
 Wolpers, Haltern, all of Fed. Rep. of
 Germany**

[73] **Assignee:** **Huels Aktiengesellschaft, Marl, Fed.
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[21] **Appl. No.:** **55,543**

[22] **Filed:** **May 29, 1987**

[30] **Foreign Application Priority Data**

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 Jun. 27, 1986 [DE] Fed. Rep. of Germany 3621628
 Dec. 18, 1986 [DE] Fed. Rep. of Germany 3643250
 Mar. 7, 1987 [DE] Fed. Rep. of Germany 3707434

[51] **Int. Cl.⁴** **C08F 4/48**

[52] **U.S. Cl.** **526/181; 526/173;
 526/209; 526/340.2; 525/244; 525/250;
 525/333.1; 525/342; 525/371; 525/914**

[58] **Field of Search** **526/173, 209, 340.2,
 526/181; 525/250, 258, 333.1, 914, 244, 342,
 371**

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,118,258 10/1978 Graveron et al. 156/60
 4,385,151 5/1983 Furukawa et al. 526/340.2 X
 4,577,002 3/1986 Broekhuis 526/181

FOREIGN PATENT DOCUMENTS

0836189 6/1960 United Kingdom 526/181

OTHER PUBLICATIONS

Hirokazu Morita et al., "Isoprene Polymerization by
 Organometallic Compounds, I," JACS 79, 5853 (1957).

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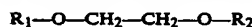
Attorney, Agent, or Firm—Millen, White & Zelano

[57] **ABSTRACT**

Polyisoprenes having a high content of 1,2- and 3,4-
 structural units, a process for their preparation, and
 their use.

The previous processes for the preparation of polyiso-
 prene having a high content of 1,2- and 3,4-structural
 units were still unsatisfactory in terms of the cocatalyst
 employed.

The use of ethylene glycol dialkyl ethers of the formula



in which R₁ and R₂ are alkyl groups having different
 numbers of C. atoms, from the group consisting of
 methyl, ethyl, n- and isopropyl and n-, iso-, sec.- and
 tert.-butyl, has, in particular, the advantage that the
 "living polymers" formed during the anionic polymeri-
 zation are not damaged.

The production of tires and damping elements using
 these polyisoprenes.

11 Claims, No Drawings

United States Patent [19]
Maeda et al.**[11] Patent Number: 4,987,194**
[45] Date of Patent: Jan. 22, 1991**[54] BLOCK COPOLYMERS AND
COMPOSITION CONTAINING THE SAME****[75] Inventors: Miduho Maeda; Hideo Takamatsu;
Masao Ishii; Shobu Minatono, all of
Kashima, Japan****[73] Assignee: Kuraray Company, Limited,
Kurashiki, Japan****[21] Appl. No.: 411,310****[22] Filed: Sep. 22, 1989****[30] Foreign Application Priority Data**

Oct. 7, 1988 [JP]	Japan	63-254657
Nov. 16, 1988 [JP]	Japan	63-290952
May 15, 1989 [JP]	Japan	1-122655

**[51] Int. Cl.³ C08F 297/04; B32B 15/08;
B32B 27/00****[52] U.S. Cl. 525/314; 428/462****[58] Field of Search 525/314; 428/462****[56] References Cited****FOREIGN PATENT DOCUMENTS**

62-080037 4/1987 Japan .

Primary Examiner—Melvyn I. Marquis*Assistant Examiner*—Vasu S. Jagannathan*Attorney, Agent, or Firm*—Oblon, Spivak, McClelland,
Maier & Neustadt**[57] ABSTRACT**

A block copolymer having a numerical average molecular weight of 30,000 to 300,000 composed of two or more blocks consisting of aromatic vinyl units having a numerical average molecular weight of 2500 to 40,000, and one or more blocks containing a vinyl bonding content of not less than 40%, having a peak temperature of primary dispersion of $\tan \delta$ at least 0° C., and consisting of isoprene or isoprene-butadiene units in which at least a part of carbon-carbon double bonds may be hydrogenated, and a composition consisting of the block copolymer. The composition can provide a vibration-damping material.

9 Claims, No Drawings

P. sind die *Diisocyanate als Edukte für die Herst. von *Polyurethanen, *Polyisocyanuraten, *Polyharnstoffen u. von unter 2. beschriebene Produkte. 2. Bez. für Polymere der allg. Struktur



mit z. B. R = Alkyl- od. Alkylaryl. Diese P. werden durch *anionische Polymerisation von Isocyanaten über die Öffnung der C,N-Doppelbindung hergestellt (Lit.¹). Derartige P. sind Polymere mit starrer Hauptkette, die abhängig vom Rest R flüssigkrist. Phasen ausbilden, also den *flüssigkristallinen Polymeren zugerechnet werden können. – E = F polyisocyanates – I poliisocianati – S poliisocianatos

Lit.: ¹ Houben-Weyl E20/1, 442–444.

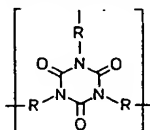
allg. (zu 1.): Ullmann (4.) 19, 303 ff. – (zu 2.): Comprehensive Polymer Sci. 5, 708 ■ Encycl. Polym. Sci. Engng. 9, 19–21.

Polyisocyanide. Durch *kationische Polymerisation von *Isocyaniden zugängliche Polymere, mit Gruppierungen der allg. Struktur



als charakterist. Grundeinheiten der Hauptkette. R können Alkyl-, Alkylaryl- od. Aryl-Reste sein. P. sind schwerlöst., hochschmelzende Prod., die noch keine techn. Verw. gefunden haben. – E polyisocyanides – F polyisocyanures – I poliisocianuri – S poliisocianuros Lit.: J. Polym. Sci. Polym. Chem. Ed. 13, 2143 (1975) ■ Macromolecules 2, 122 ff. (1969).

Polyisocyanurate. Bez. für *Polymere mit der Gruppierung

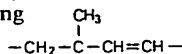


als charakterist. Grundeinheit der *Makromoleküle. P. sind zugänglich durch Cyclotrimerisierung von *Isocyanaten (z. B. techn.: Phenylisocyanat, R = C₆H₅). Setzt man bei der stark exotherm verlaufenden Polymerisation Treibmittel, z. B. Chlorfluorkohlenwasserstoffe ein, erhält man P. in Form von *Hartschaumstoffen mit guter Dauerwärmebeständigkeit u. niedriger Wärmeleitfähigkeit.

Verw.: U. a. im Bausektor als Temp.-Dämmmaterialien u. „Leichtbeton“, zur Herst. von Sandwich-Elementen u. Isolierplatten für den Hoch- u. Schiffsbau (s. Lit.). – E = F polyisocyanurates – I poliisocianurati – S poliisocianuratos

Lit.: Ullmann (4.) 15, 442 f.

Polyisoprene. Sammelbez. für *Polymere mit *Kautschuk-Eig., für die die Gruppierung

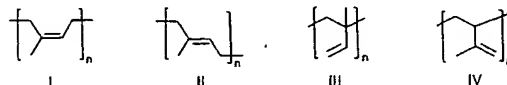


als dominierende Grundeinheit der *Makromoleküle charakterist. ist. Zu den P. gehören definitionsgemäß *Naturkautschuk, *Balata u. *Guttapercha als natürliche Polymere.

Synth. P. (Isopren-Kautschuke, Polyisopren-Kautschuke, Kurzz. *IR) werden hergestellt durch *Polymerisation von *Isopren, die als *Lösungspolymeri-

sation (Lsgm.: Pentan od. Hexan) unter Verw. von Titan-tetrachlorid/Aluminiumtrichlorid als Koordinationskatalysatoren bzw. Butyllithium als *Initiator durchgeführt wird.

Isopren kann in cis-1,4-(I)-, trans-1,4-(II)-, 1,2-(III)- u. 3,4-(IV)-Addition in die wachsende Polymerkette eingebaut werden.



Mit dem Titan-Katalysator werden P. mit hohem (~98%) cis-1,4- neben minimalem 3,4-Anteil, mit dem Lithium-Initiator Prod. mit 90–92% cis-1,4-, 2–3% trans-1,4- u. 6–7% 3,4-Anteilen erhalten, die in ihrer Struktur dem Natur-Kautschuk entsprechen. Mit Vanadium-Koordinations-Katalysatoren sind auch P. mit hohen trans-1,4-Anteilen zugänglich; diese entsprechen strukturell Guttapercha u. Balata, haben aber keine techn. Bedeutung. Die Molmassen der Titan-katalysiert bzw. Lithium-initiiert hergestellten P. liegen im Bereich von 1000000–1500000 bzw. 1500000–2500000 g/mol. Die strukturellen Unterschiede dieser P. wirken sich deutlich auf deren Eig. (Kristallinitätsgrad, Verarbeitungs- u. Vulkanisations-Verhalten) aus. Titan-P. können ähnlich wie Naturkautschuk, Lithium-P. wie *Polybutadiene vulkanisiert werden.

Verw.: Prinzipiell können die synthet. P., insbes. die Titan-P., ähnlich wie Natur-Kautschuk eingesetzt werden. Lithium-P. werden vornehmlich im Verschnitt mit anderen Synthesekautschuken (SBR) od. Naturkautschuk verwendet. Haupteinsatzgebiete sind die Herst. von Laufflächen u. Karkassen für Reifen von LKW's, Traktoren u. Flugzeugen, von Schuhsohlen, von Prod. für medizin. Anw. od. für die Verpackung von Nahrungsmitteln. Anderen Kautschuken werden P. zugesetzt, um deren Verarbeitung zu erleichtern. Die Prod.-Kapazitäten weltweit für Synth.-P. werden für 1991 mit ca. 1,25 Mio. t angegeben (Lit.¹). – E polyisoprenes, polyisoprene rubbers – F polyisoprènes – I poliisopreni – S poliisoprenos Lit.: ¹ Gummi, Asbest + Kunstst. 44, Nr. 1, 7 ff. (1991). allg.: Ceausescu, Stereospecific Polymerization of Isoprene, Oxford: Pergamon 1983 ■ Encycl. Polym. Sci. Engng. 8, 487–564 ■ Franta, Elastomers and Rubber Compounding Materials, S. 112–121, Amsterdam-New York: Elsevier 1989 ■ Hofmann, Rubber Technology Handbook, S. 85–88, München-New York: Hanser Publ. 1989 ■ Houben-Weyl E20/2, 822–842 ■ Kirk-Othmer (3.) 8, 582–593 ■ Ullmann (4.) 13, 617 ff. – [Z 4002.60: CAS 9003-27-4]

Polyisopren-Kautschuk s. Polyisoprene.

Polykationen s. Polyelektrolyte.

Polyketale. Bez. für auch *Polyketone genannte *Polymere der allg. Struktur:



P. sind herstellbar durch *Polymerisation von Ketonen über die Carbonyl-Doppelbindung. Sie sind in-

RÖMPP CHEMIE LEXIKON

9., erweiterte
und neu-
bearbeitete
Auflage

Herausgeber

Prof. Dr. Jürgen Falbe Düsseldorf

und

Prof. Dr. Manfred Regitz Kaiserslautern

Bearbeitet von zahlreichen Fachkollegen

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NE: Römpp, Hermann [Begr.]; Falbe, Jürgen [Hrsg.]; Chemie-Lexikon
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Bd. 5. Pl-S. – 1995


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[CHIN](#)



» HYBRAR™
HIGH PERFORMANCE THERMOPLASTIC RUBBER


What is HYBRAR™ ?

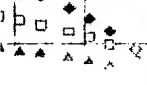
Grade List

Types and Basic Properties

Applications

Processing Conditions


» SEPTON™
HIGH PERFORMANCE THERMOPLASTIC RUBBER



» SEPTON™ V-series
HIGH PERFORMANCE THERMOPLASTIC RUBBER

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What is HYBRAR™ ?

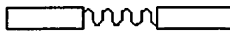
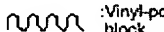
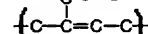
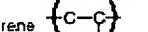
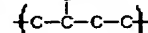
HYBRAR™ is a series of high performance thermoplastic rubbers developed by KURARAY CO., LTD. using its unique isoprene technology.

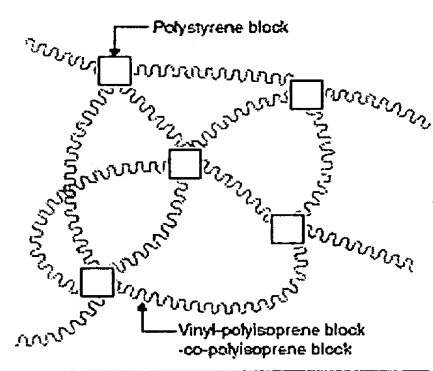
HYBRAR™ is a special thermoplastic rubber which exhibits high vibration damping properties at room temperature.

Both hydrogenated and non-hydrogenated grades of HYBRAR™ are available. In addition to the superior vibration damping properties, hydrogenated grades also exhibit excellent miscibility with polypropylene, and may be used to produce blends with excellent transparency, flexibility and mechanical properties.

HYBRAR™ is available in a triblock type having polystyrene blocks and a vinyl bonded polyisoprene block as shown in the following diagram.

Molecular Structure Model

	Polystyrene block $\text{-(C}_6\text{H}_5\text{)-}$
	Vinyl-polyisoprene block $\text{-(C}_5\text{H}_7\text{)-}$
	polyisoprene block $\text{-(C}_5\text{H}_8\text{)-}$
	hydrogenated vinyl-polyisoprene block $\text{-(C}_5\text{H}_8\text{)-}$
	hydrogenated polyisoprene $\text{-(C}_5\text{H}_8\text{)-}$



Polystyrene block

Vinyl-polyisoprene block
-co-polyisoprene block

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